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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,339	02/21/2001	Sadaji Tsuge	P107336-00018	1063

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EXAMINER

MUTSCHLER, BRIAN L

ART UNIT

PAPER NUMBER

1722

3

DATE MAILED: 02/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-3

**Office Action Summary**

Application No.

09/788,339

Applicant(s)

TSUGE, SADAJI

Examiner

Brian L. Mutschler

Art Unit

1722

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

1. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

### *Drawings*

2. Figures 3 and 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

3. The disclosure is objected to because of the following informalities:
- ✓ a. On page 1, line 6, the second occurrence of "relates" should be deleted;
  - ✓ b. On page 1, lines 12-13, the phrase "developed as energy source for substituting with environmentally harmful fossil fuel" should be changed to "developed as an energy source to substitute for environmentally harmful fossil fuels";
  - ✓ c. On page 1, line 16, "an" should be changed to "their";

Art Unit: 1722

- ✓d. On page 2, line 14, "a" should be inserted after "that";
- ✓e. On page 2, line 22, "a" should be inserted after "with";
- ✓f. On page 3, line 1, the sentence should be rewritten to clarify its meaning;
- ✓g. On page 3, line 8, "such" should be inserted after "film";
- ✓h. On page 3, line 9, "101 which" should be changed to "101, in which";
- ✓i. On page 3, line 13, "for the" should be changed to "a";
- ✓j. On page 4, line 5, "a" should be inserted after "has";
- ✓k. On page 4, line 18, "is" should be changed to "are";
- ✓l. On page 4, line 21, "in" should be deleted;
- ✓m. On page 6, line 10, "the change rate" should be changed to "changes in the rate";
- ✓n. On page 7, line 14, "to" should be changed to "the";
- ✓o. On page 7, line 25, "can be entered" should be changed to "can enter";
- ✓p. On page 8, line 3, "a" should be inserted after "by";
- ✓q. On page 9, line 8, the reference character "4" should be inserted after "resin sheet";
- ✓r. On page 9, line 22, the reference character "3" should be inserted after "elements";
- ✓s. On page 9, line 23, the reference character "4" should be inserted after "resin";
- ✓t. On page 10, line 21, "has" should be changed to "have";
- ✓u. On page 11, line 12, the acronym "HIT" should be defined;

Art Unit: 1722

- v. On page 11, line 14, "defective" should be changed to "defects";
- w. On page 11, line 14, "is" should be changed to "are";
- x. On page 11, line 15, "is" should be changed to "are";
- y. On page 11, line 20, the acronym "ITO" should be defined;
- z. On page 12, line 11, "characteristic" should be changed to "characteristics";
- aa. On page 12, line 14, "member" should be changed to "members";
- bb. On page 12, line 15, the reference character "5" should be inserted after "elements";
- cc. On page 12, line 15, "the" should be inserted after "position"; and
- dd. On page 12, lines 19-20, "forming semiconductor junction on the side of the rear surface film 2 is positioned" should be changed to "forming a semiconductor junction is positioned on the side of the rear surface film 2".

Appropriate correction is required.

### ***Claim Objections***

4. Claims 1, 2 and 8 are objected to because of the following informalities:
- a. In claim 1, line 6, "a" should be inserted before "semiconductor";
  - b. In claim 2, line 2, "structure" should be changed to "structured", and
  - c. In claim 8, line 2, "includes hetero junction" should be changed to "includes a heterojunction".

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 2 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because it claims "the solar cell element has a semiconductor junction positioned on an opposite side of the front surface side light transmitting member" (claim1, lines 6-7). What the junction is on the opposite side of is not defined by the claim or the disclosure.

Claim 2 does not define how the solar cell element is structured so that light enters from a side opposite of the junction.

Regarding claim 6, the word "type" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "type"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(b).

Also in claim 6, "heat diffusing type single crystalline silicon solar cell element" is not defined. The disclosure does not define what constitutes a "heat diffusing" element.

For the purpose of examination, the examiner made the following assumptions:

Art Unit: 1722

- a. In claim 1, the semiconductor junction was assumed to be formed on the opposite side of the front surface light transmitting member as the incoming light, as shown in figures 1 and 2 of the instant invention; and
- b. In claim 6, a "heat diffusing" solar cell element is a solar cell element capable of being formed by a heat diffusion process.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

8. Claims 1, 3-5 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamagishi et al. (U.S. Pat. No. 6,300,556).

Yamagishi et al. show a solar cell module comprising a front surface side light transmitting member **1** containing sodium, a rear surface member **8**, a solar cell element sealed with sealing resin **9** between the front and rear surfaces, and the solar cell element has a semiconductor junction positioned on an opposite side of the front member **1** (col. 7, line 29; col. 8, line 67; fig. 1).

With respect to claim 3, the front member 1 is made of soda lime glass (col. 7, line 29).

With respect to claims 4 and 5, the rear surface member 8 is made of a transparent resin film (col. 8, line 67 to col. 9, line 1).

With respect to claim 7, the solar cell element includes an amorphous semiconductor layer (col. 3, line 23).

Since Yamagishi et al. teach the limitations of the instant claims, the reference is deemed to be anticipatory.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagishi et al. (U.S. Pat. No. 6,300,556) in view of Matsushita et al. (U.S. Pat. No. 6,222,118).

Yamagishi et al. disclose a solar cell module having the limitations of claim 1 of the instant invention, as explained above in paragraph 8. Yamagishi et al. do not disclose the use of single crystalline silicon solar cell elements as claimed in the instant invention.



Matsushita et al. teach the use of single crystalline silicon solar cell elements (col. 4, line 53). Matsushita et al. also teach that polycrystalline silicon, amorphous silicon, or combinations of both can equally be used in solar cell elements (col. 8, line 63).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the solar cell modules of Yamagishi et al. using a single crystalline silicon layer because single crystalline layers, amorphous layers and polycrystalline layers are equally usable in solar cell modules, as taught by Matsushita et al. (col. 8, line 63).

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamagishi et al. (U.S. Pat. No. 6,300,556) in view of Asano et al. (U.S. Pat. No. 5,456,764).

Yamagishi et al. disclose a solar cell module having the limitations of claim 1 of the instant invention, as explained above in paragraph 8. Yamagishi et al. do not disclose a solar cell element including a heterojunction between a crystalline semiconductor and an amorphous semiconductor, as claimed in the instant invention.

Asano et al. disclose a solar cell having a heterojunction formed between an amorphous semiconductor layer formed on a crystalline semiconductor layer (col. 2, line 51). Asano et al. teach the use of such a heterojunction in solar cells because it can be made in large quantities as well as large sizes (col. 2, line 38).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have produced the solar cell module of Yamagishi et al. using a heterojunction formed between a crystalline semiconductor and an amorphous semiconductor because such a solar cell can be made in large quantities as well as large sizes, as taught by Asano et al. (col. 2, line 38).

### ***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 1 and 3-5 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of copending Application No. 09/772994. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims from the copending Application No. 09/772994 anticipate the claims of the instant invention.

Specifically, copending Application No. 09/772994 discloses "a light transmitting member on a front surface side containing at least sodium, a rear surface resin film, a

Art Unit: 1722

plurality of solar cell elements sealed with sealing resin between the light transmitting member on the front surface side and the rear surface resin film" (claim 1). In claim 2 of copending Application No. 09/772994, "the light transmitting member on the front surface side is glass and the rear surface resin film is a transparent resin film" is also claimed. The copending Application No. 09/772994 anticipates the claims of the instant invention because having solar cell elements sealed with sealing resin between the light transmitting member on the front surface side" requires the solar cell elements to have "a semiconductor junction on an opposite side of the front surface side light transmitting member" as claimed in the instant invention (claim 1, lines 6-7). Since the claims of the copending application teach the limitations of the instant claims, the copending application is deemed to be anticipatory.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

14. Claims 1 and 3-5 are provisionally rejected under 35 U.S.C. 103(a) as being obvious over copending Application No. 09/772994 which has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e) if published or patented. This provisional rejection under 35 U.S.C. 103(a) is based upon a presumption of future publication or patenting of the conflicting application.

Copending Application No. 09/772994 discloses "a light transmitting member on a front surface side containing at least sodium, a rear surface resin film, a plurality of

solar cell elements sealed with sealing resin between the light transmitting member on the front surface side and the rear surface resin film" (claim 1). In claim 2 of copending Application No. 09/772994, "the light transmitting member on the front surface side is glass and the rear surface resin film is a transparent resin film" is also claimed. The copending Application No. 09/772994 reads on the claims of the instant invention because having solar cell elements sealed with sealing resin between the light transmitting member on the front surface side" restricts the solar cell elements to have "a semiconductor junction on an opposite side of the front surface side light transmitting member" as claimed in the instant invention (claim 1, lines 6-7). Since the claims of the copending application teach the limitations of the instant claims, the copending application is deemed to be anticipatory.

This provisional rejection might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by a showing of a date of invention for the instant application prior to the effective U.S. filing date of the copending application under 37 CFR 1.131. For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Art Unit: 1722

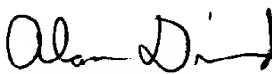
**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L. Mutschler whose telephone number is (703) 305-0180. The examiner can normally be reached on Monday-Friday from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

blm  
February 6, 2002

  
**ALAN DIAMOND**  
**PRIMARY EXAMINER**  
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